



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,703	08/08/2002	Frank Lin	9458-US-PA	9331
31561	7590	06/18/2004	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE 7 FLOOR-1, NO. 100 ROOSEVELT ROAD, SECTION 2 TAIPEI, 100 TAIWAN			MEEKS, TIMOTHY HOWARD	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 06/18/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/064,703	LIN, FRANK	
	<b>Examiner</b>	<b>Art Unit</b>	
	Timothy H Meeks	1762	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                              |                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Remailing of Office Action***

This is a remailing of the office action initially mailed on 09 July 2003 and then again on 10 September 2003 in response to applicants' letter and supporting documentation filed on 02 February 2004 stating that they did not receive the 10 September 2003 office action.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language "group of gas mixture consisting of a hydrogen gas, a nitrogen gas....." is confusing as none of the recited gases is a mixture. The examiner suggests the following wording: "the group consisting of a hydrogen gas, a nitrogen gas, an argon gas, a helium gas, and mixtures thereof.". The examiner has assumed the suggested wording for the purposes of applying the rejections based upon prior art set forth below.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-8, 12-16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Doi (5,632,821).

The limitations of claims 1 and 13 are disclosed in Doi as follows:

- "performing a plasma enhanced.....on a first batch of substrate" and "removing...." (col. 5, lines 40-44, batch of substrates taught at col. 4, lines 37-40);
- "performing a cleaning....." (col. 5, lines 45-62);
- "performing a pre-deposition process....." and "performing a discharge plasma treatment....." (col. 6, lines 5-23, please note that the introduction of monosilane and hydrogen and formation of plasma discharge thereof to form a film on the chamber meets both claimed steps of "performing a pre-deposition process....." and "performing a discharge plasma treatment.....". Furthermore, the step of evacuating the byproducts from this step prior to introducing a second substrate and depositing is a "pre-deposition process");
- "loading a second batch..." and "placing a second batch...." (col. 6, lines 23-35 and col. 4, lines 37-40); and,
- "repeating steps....." (col. 2, lines 57-59 disclosing desirability for "mass-production plasma CVD process" which inherently involves performing the steps repeatedly and col. 4, lines 32-38 disclosing carrying multiple substrates (i.e., "one by one") and batches of substrates to tools inherently involves repeating the process).

The limitations of the dependent claims are disclosed as follows:

- claims 2-4 and 14-16: col. 5, lines 55-60;
- claims 6, 7, 18, and 19: col. 6, lines 23-34; and

- claims 8, 12, and 20: col. 5, lines 9-12.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta (5,824,375) in view of Doi (5,632,821).

The following limitations of claims 1 and 13 are disclosed in Gupta:

- "performing a plasma enhanced.....on a substrate" and "removing...." (col. 2, lines 63-65 and col. 6, lines 45-60);
- "performing a cleaning....." (col. 8, lines 37-44);
- "performing a pre-deposition process....." and "performing a discharge plasma treatment....." (col. 8, lines 44-65);
- loading a second substrate in the chamber and coating by PECVD (col. 9, lines 1-31); and,
- "repeating steps....." (col. 1, lines 44-48 disclosing periodic cleaning of the chamber to control particle contamination from film buildup in the chamber from processing).

Gupta discloses processing of a single substrate at a time rather than "loading a second batch..." as required in claim 1 or "...on a first batch of substrate..." or "...a second batch of

Art Unit: 1762

substrate..." as required by claim 13. However, because Doi discloses that it is known to perform PECVD on substrates either substrate by substrate or batch by batch (col. 4, lines 33-38) and processing a batch of substrates has the obvious advantage of coating more than one substrate at once which would reasonably be expected to increase process throughput, it would have been obvious to have provided a batch of substrates for PECVD processing to obtain this advantage.

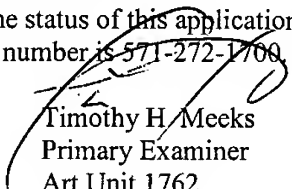
The limitations of the dependent claims are disclosed as follows:

- claims 2-4 and 14-16: col. 8, lines 44-53 of Gupta;
- claims 5 and 17: col. 9, lines 1-35 of Gupta; and
- claims 8-12 and 20: col. 8, lines 45-50 of Gupta, noting that Gupta is open to any inert gas of which hydrogen and nitrogen are.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy H Meeks whose telephone number is 571-272-1423. The examiner can normally be reached on Mon, Wed, Thur 6-6:30, Fri 6-10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571-272-1415. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1700.



Timothy H Meeks  
Primary Examiner  
Art Unit 1762